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10/561,620	03/06/2007	Karlheinrich Meisel	CH-8424/LeA 36,763	9754
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			ART UNIT	PAPER NUMBER
			1791	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/561,620	<b>Applicant(s)</b> MEISEL ET AL.	
	<b>Examiner</b> JACOB T. MINSKEY	<b>Art Unit</b> 1791	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, and 14 is/are rejected.
- 7) ☐ Claim(s) 3, 12, 13 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

The layout of the instant specification is objected to for not conforming to the required arrangement. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use. Appropriate correction is required.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### ***Claim Objections***

1. Claim 3 is objected to because of the following informalities: the German word “oder” is present. Appropriate correction is required.
2. Claims 12 and 13 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim *should refer to other claims in the alternative only*. See MPEP § 608.01(n). **Accordingly, the claims have not been further treated on the merits.**
3. Claim 15 objected to under 37 CFR 1.75(c) as being a multiple dependent claim that is dependent from another multiple dependent claim. See MPEP § 608.01(n). **Accordingly, the claims have not been further treated on the merits.**

### ***Claim Rejections - 35 USC § 112 and 35 USC § 101***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. 35 U.S.C. 101 reads as follows:  
  
Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.
6. Claims 1-8, and 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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7. Claims 1-8 provides for the use of a silica sol, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 1-8 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

8. Claims 3-4, and 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite because a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 3

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recites the broad recitation “B is bivalent”, and the claim also recites “B is in particular a linear or branched alkylene group...” which is the narrower statement of the range/limitation.

9. Claim 4 recites the broad limitation “n is from 1 to 6” and also the narrower limitation “in particular 3.” It is unclear if n=3 is a preferred embodiment, an example or a further limitation.

10. The same argument as above is applies for claims 10 and 11 regarding to the mean particle size and sulfur content of the silica sol.

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-4, 6, 10-11, and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Engle et al, USP 5,888,290.

12. Regarding claim 1, Engle et al teach the use of silica sols (colloidal silica is preferred, column 2 lines 24-25 and also column 4 line 19) containing sulfonic acid groups and/or mercapto groups (column 3 line 53) as microparticles in paper production, in particular for paper retention (impart water repellency in paper, column 1 lines 44-46).

13. Regarding claim 2, Engle remains as applied in claim 1 and further teaches that silica sols (colloidal silica is preferred, column 2 lines 24-25 and also column 4 line 19) used are those which have, bonded to a silicon atom, a group of the formula I and/or II,

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-B-(SO<sub>3</sub>M)<sub>p</sub> (I), -B-(SH)<sub>p</sub> (II), in which B is a (p+1)-valent bridge member, p is a number from 1 to 3 and M is hydrogen, an alkali metal, in particular Na, Li or K, an alkaline earth metal, in particular Mg, Ca or ammonium. This formula is met by Engle's organosilane representative example "3-mercaptopropyltrimethoxysilane" given from column 3 line 65- column 4 line 16.

14. Regarding claim 3, Engle remains as applied in claim 2 and further teaches that B is bivalent, p is 1, B is in particular a linear or branched alkylene group optionally interrupted by one or more oxygen atoms and having 1 to 15 C atoms, a cycloalkylene group having 5 to 8 C atoms or a unit of the claimed formula. Engle's organosilane representative example "3-mercaptopropyltrimethoxysilane" given from column 3 line 65- column 4 line 16 contains a bivalent bridge member of CH<sub>2</sub>.

15. Regarding claim 4, Engle remains as applied in claim 2 and further teaches that B is -(CH<sub>2</sub>)<sub>n</sub> where n is from 1 to 6, in particular 3 ("3-mercaptopropyltrimethoxysilane" given from column 3 line 65- column 4 line 16).

16. Regarding claim 6, Engle remains as applied in claim 1 and further teaches that the silica sols have a mean particle size of less than 400 nm, determined by the TEM method (about 200 nm, column 2 lines 21-37).

17. Regarding claim 10, Engle et al teach a silica sol (colloidal silica is preferred, column 2 lines 24-25 and also column 4 line 19) containing sulfonic acid groups and/or mercapto groups (column 3 line 53) and having a mean particle size, measured according to TEM, of 2-45 nm, preferably of 2-20 nm (20 nm as shown in table 1 in column 13).

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18. Regarding claim 11, Engle et al teach a silica sol (colloidal silica is preferred, column 2 lines 24-25 and also column 4 line 19) containing sulfonic acid groups and/or mercapto groups (column 3 line 53) and having a sulfur content, based on SiO<sub>2</sub> of the silica sol, of from 0.1 to 30 mol%, preferably from 0.1 to 8 mol%, in particular from 1 to 5 mol% (.001-.1 mole per gram of SiO<sub>2</sub> as taught by column 4 lines 50-67).

19. Regarding claim 14, this claim is a product by process claim, see MPEP § 2113. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself (i.e., differences in product characteristics), and not on its method of production. In the present instance, all that is claimed is a silica sol, which is shown by Engle (colloidal silica is preferred, column 2 lines 24-25 and also column 4 line 19).

20. Regarding claim 15, Engle remains as applied in claim 10 and further teaches a paper characterized in that it contains a silica sol (column 1 line 15 and line 46).

21. Claims 1, and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Johansson et al, USP 5,368,833.

22. Regarding claim 1, Johansson et al teach the use of silica sols (column 2 line 45) containing sulfonic acid groups (column 3 line 5) and/or mercapto groups as microparticles in paper production, in particular for paper retention (column 1 line 6).

23. Regarding claims 7 and 8, Johansson remains as applied in claim 1 and further teaches teach that the silica sol is used in combination with one of the claimed cationic polymers as a microparticle system in paper production (polyacrylamide, column 4 lines 66-68).



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24. Regarding claim 9, Johansson et al teach a process for the production of paper (column 1 line 6), characterized in that a silica sol (column 2 line 45) containing sulfonic acid groups (column 3 line 5) and/or mercapto groups and a cationic polymer (polyacrylamide, column 4 lines 66-68) are added to an aqueous (column 1 line 14) cellulose suspension in any desired sequence, and sheet formation, drainage and drying of the sheet are then carried out (column 4 lines 21-50 and column 5 line 65 - column 6 line 19).

### ***Claim Rejections - 35 USC § 103***

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

27. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

28. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engle et al, USP 5,888,290.

29. Regarding claim 5, Engle remains as applied in claim 1 and further teaches that the silica sol has a radical (suitable monomers ... are free-radically polymerizable, column 5 lines 1-4 see also column 3 lines 17-43) of the formula  $-(CH_2)_3-SO_3M$ , in which M is hydrogen, an alkali metal, an alkaline earth metal or ammonium (monomer containing sulfonic acid "CH<sub>3</sub>SO<sub>2</sub>OH", column 6 line 14).

30. While Engle does not explicitly state the claimed  $-(CH_2)_3-SO_3M$  as a radical, Engle does teach the benefits of using a radical that contains sulfonic acid (column 6 lines 12-14), and it would have been obvious to one of ordinary skill in the art to select the optimal radical containing sulfonic acid, for the benefit of utilizing the microparticles that impart durable stain release to substrates.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACOB T. MINSKEY whose telephone number is

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(571)270-7003. The examiner can normally be reached on Monday to Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven P. Griffin/  
Supervisory Patent Examiner, Art  
Unit 1791

JTM